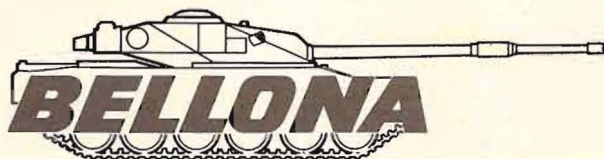




SERIES ELEVEN

PANZERKAMPFWAGEN IV AUSF D.	(GE)
Turret of late production PzKw IV J	(GE)
A.C.V. H.P. and L.P. (A.E.C.) T 6x6 Mk 1	(UK)
Medium Tank T6	(US)
Light Tank M22 (T9E1) "LOCUST"	(US)



MILITARY VEHICLE PRINTS

BELLONA
30p



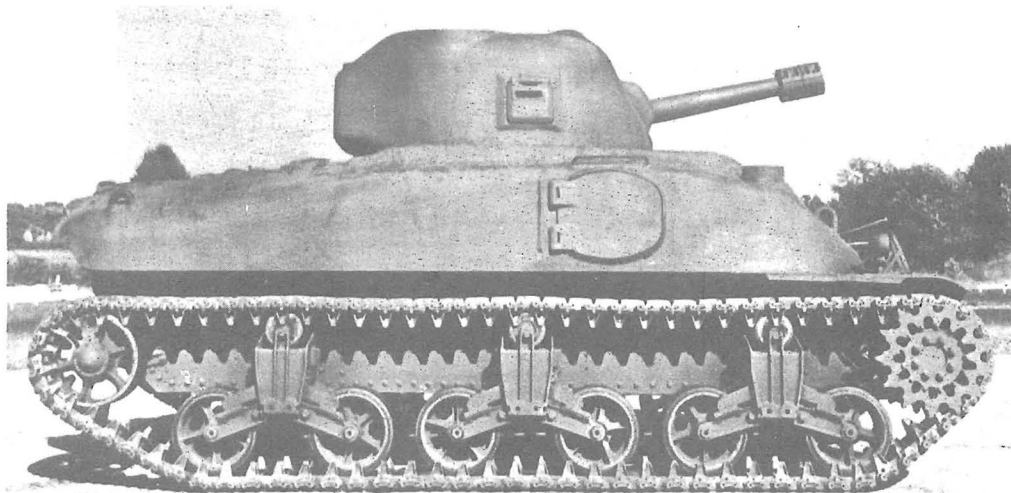
A Panzerkampfwagen IV Ausf D of the Afrika Korps. Note the turret top details and the cranked front plate with double top drivers visor flaps.

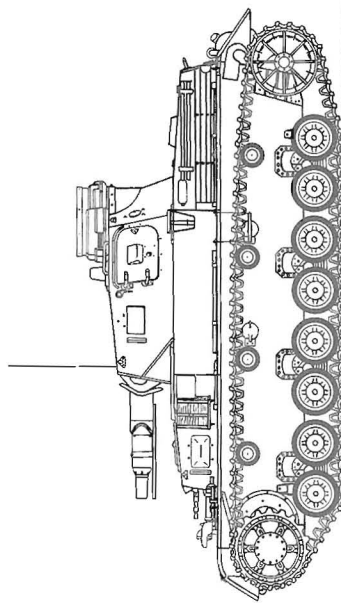
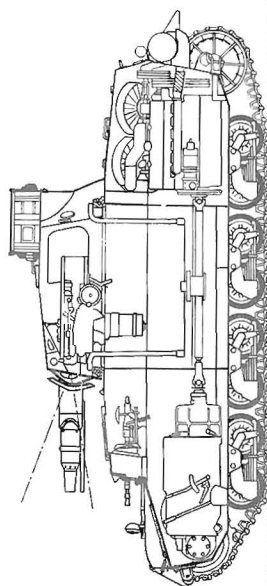
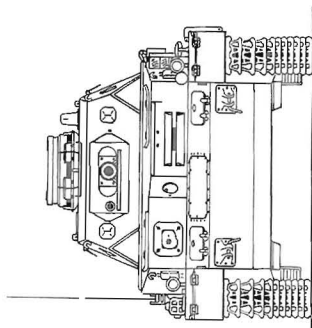
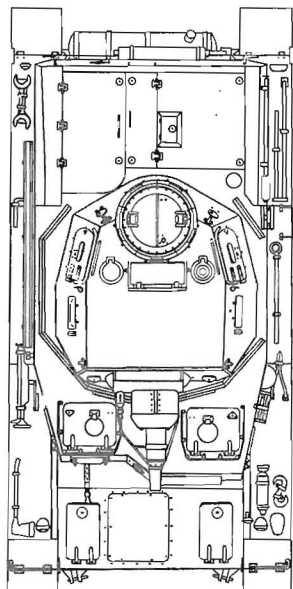
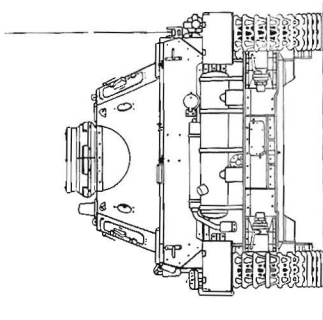


Panzerkampfwagen IV Ausf E carried a lot of bolted on additional armour plates. The new cupola and drivers visor are the distinguishing features when trying to differentiate between this and the Ausf D.

COVER ILLUSTRATION From February to June of 1941 the main body of the troops of the Deutsches Afrika Korps arrived in Tripoli to assist the Italians. With them came the 15th Panzer Division whose tanks included the Pz Kw III Ausf F, G and H, with 5cm L/42, and the Pz Kw IV Ausf D and E with 7.5cm L/24. Many of these tanks were still in the dark blue grey which was standard on German vehicles from 1935. Soon after their arrival a colour scheme of basic sand colour with mottling or strips of grey green or yellow brown was adopted. In 1942 the establishment of German Divisions was modified and a new Pz Div. was formed from elements of the motorised Light Divisions then in Africa. The colour drawing depicts a PzKw IV Ausf D taken over by the 21st Pz Div. whose insignia is on the front plate beside the "Palm Tree" of the D.A.K. By 1942 the mottled paints were dark grey or brown.

The Medium Tank T.6 which appeared in 1941 was the fore runner of the Sherman Tank Series.





Panzerkampfwagen IV. Ausf D (4/BW)
Scale 1:76 (4mm to 1 foot) Drawn by D.P. Dyer.

Panzerkampfwagen IV, ausf D, Sd Kfz 161 (type 4/BW)-1939

No radical changes to the basic design took place with the introduction of the Pz Kpw IV Ausf D, although there were a number of detailed improvements and alterations. The main modification was that the armour thickness of the Hull sides, Rear, and glacis plate were increased from 14.5mm to 20mm thereby increasing the weight by 2 tons.

As from this model the 7.5cm KwK (L/24) was fitted with an external mantlet, and the drivers front plate was set forward in a similar manner to the Ausf A. The bow MG position was re-introduced, but this time with a square gimbal mounting. Another difference to Ausf A was the drivers visor, which was of the double shuttered type as in Ausf C, instead of the letter box flap variety. The pistol port in the centre of the front vertical plate and the two at the rear of the turret differed from those on Ausf A by being round instead of square. The design of the vision slots on the hull and turret sides, were also slightly modified. Whilst the cupola fitted was the same as that on Ausf C, it differed quite a lot from the rather simple drum shaped cupola of the Ausf A. The drawing shows the front three visors open and the rear two closed to show the method of operation. Each of the five vision blocks were protected by armoured segments, each of which consisted of an upper and lower member which extended around the cupola for a fifth of its diameter. These upper and lower members were moved upwards and downwards respectively, by operating handles inside the cupola, thereby enabling the Tank Commander to select any vision block he wished. This point has been gone into in some detail in view of the confusion caused by the appearance of this cupola which differed when the vision slots were opened or closed.

Various sources differ as to the exact date the Ausf D went into production, but it would appear to have been included in the total of 278 Pz Kpfw IV in service at the commencement of the French Campaign in May 1940. Chassis serial numbers of the Ausf D run from 80501 - 80750

The drawing shows an early production model with limit stops on only the first and last road wheels, and without a turret stowage box. These turret stowage boxes do not appear to have become standard until 1941, and the North African Campaign. Later production models especially those sent to Africa, appear to have been fitted with new engine covers with louvres for air intake to the fans. Limit stops were now fitted to most of the wheels.

The Ausf E (S/BW Chassis numbers from 80801 - 82000) had a hull and track work that was externally identical to that of the Ausf D. However, the nose plate was increased to 50mm. The drivers visor was new with a much simplified single hinged flap. The basic superstructure front plate remained at only 30mm - probably because a new visor and MG mount was still to be designed for fitting in the 50mm plate. Additional face hardened 20mm armoured plate was bolted on to the hull during manufacture to improve the protection of the fighting compartment. 30mm plates were spaced about 3 inches in front of the hull mg position. Sometimes similar spaced armour was fitted in front of the driver.

The armament remained the same but the turret was extensively redesigned to the form it held until 1945 (see appendix drawing on page 6) A new Commanders cupola with armoured thicknesses of 30 - 67 mm replaced the one of the Ausf D which has an armour basis of only 20mm The back of the turret consisted of a single curved 14 degrees sloping plate, whereas in earlier models the top of the plate was cut away to allow for the rounded vertical plate that continued the line of the cupola. An electrical extractor fan replaced the rectangular ventilator flap and the right hand signal port was omitted. The side door and vision slots remained the same as on the Ausf D. Both the Ausf D and the E were fitted with 40mm wide tracks of 99 links when it became available. This conversion necessitated the replacement of the driver sprockets by one of a new design.

As with the Ausf E, the Ausf D was fitted with additional armour, at first unofficially, as a field modification, but later as a factory improvement to vehicles being repaired. Factory uparmoured Ausf D's also had the two signal port flaps and the ventilator flap on the turret roof plated over when the fan type ventilator was fitted. An example of an uparmoured Ausf D is on display at the Ordnance Museum, Aberdeen Proving Ground, Maryland, U.S.A. In August 1942, Hitler ordered that all Pz Kpfw IV returned to the factory for refitting or repair were to be fitted with the new longbarrelled 7.5cm KwK 40 (L/43) An example of an Ausf D (Chassis Number 80732) uparmoured and upgunned to this later specification and fitted with "Schuertzen" spaced armour is on display at the R.A.C. Tank Museum, Bovington England. A photograph of this tank appears in Bellona Prints. Series. 6.

Technical Specification for Panzerkampfwagen 4 Ausf. D. (4 BW)

Crew: 5
Weight: 44,120 lbs (19.7 long tonnes) 22 short tons (19.3 tonnes)

Performance

Speed: Max. Road 26 m.p.h. (42 Km.p.h.)

Max. gradient: 30 degrees.

Fording Depth: 2' 7½" (80 cm)

Trench Crossing: 7' 6½" (230 cm)

Obstacle Height: 2' (61 cm)

Range: road: 125 miles (201 Km)

Fuel Capacity: 103 gals. imp. (470 Litres)

Dimensions: Length overall: 19' 4½" (591 cm)

Width over steps: 9' 7½" (292 cm)

Height to top of Cupola: 8' 6" (259 cm)

Ground Clearance: 1' 3½" (40 cm)

Track Width: 1' 3" (38 cm)

Number of Links: 101

Fire Height of Gun: 6' 5" (195 cm)

Turret Ring: dia: 5' 5" (165 cm)

Mechanical Details

Engine: 1 x Maybach, HL 120 PRM D - 12 petrol water cooled
300 b.h.p. at 3000 r.p.m.

Gear box: SSG 76, 6 forward, 1 reverse.

Steering: Epicyclic track and brake.

Suspension: 4 articulated pairs of double wheels each side, sprung on ½ elliptic leaf springs. 4 return rollers each side.

Armament: 1 x 7.5 cm KwK L/24 with co-axial 7.9 mm MG 34 mounted in 360 degrees power traverse turret
1 x 7.92 mm MG 34 bow gimbal.

Ammunition Stowage: 75 mm rounds 80 7.5 mm 2,800

Armour: Drivers front plate: 30 mm at 10 degrees.
Glacis plate: 20 mm at 73 degrees
Nose plate: 30 mm at 12 degrees
Nose, lower: 20 mm at 60 degrees
Rear: 20mm at 12 degrees and 9 degrees
Belly: 20 mm - 10 mm horizontal

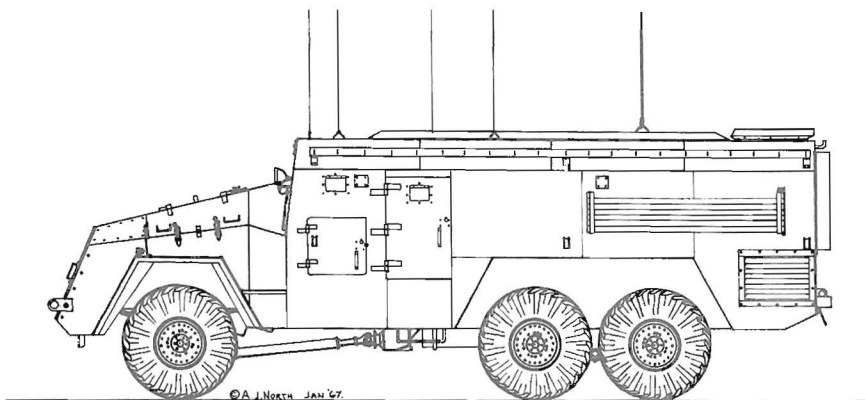
Deck: 11 mm Horizontal

Sides: 20 mm vertical

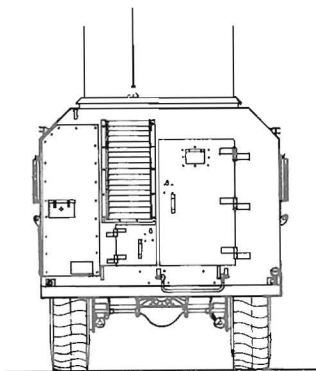
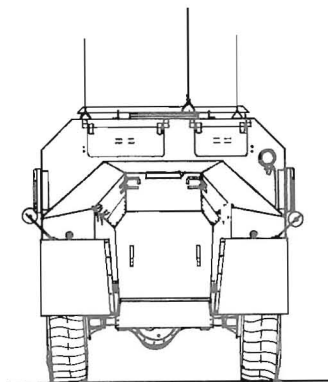
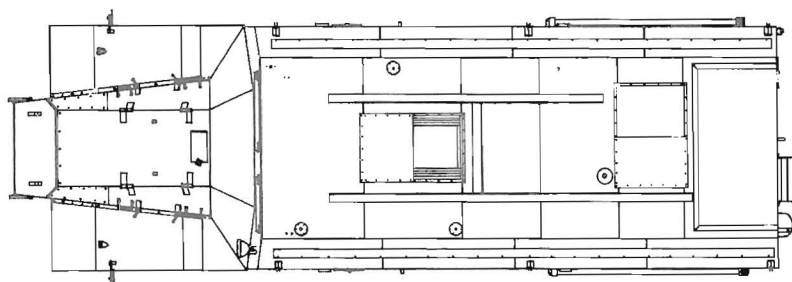
Turret, front: 30 mm at 11 degrees
sides 20mm at 26 degrees
rear 20mm at 20 degrees and vertical
roof 10mm at 84 degrees and Hor:

Gun mantlet: 30mm

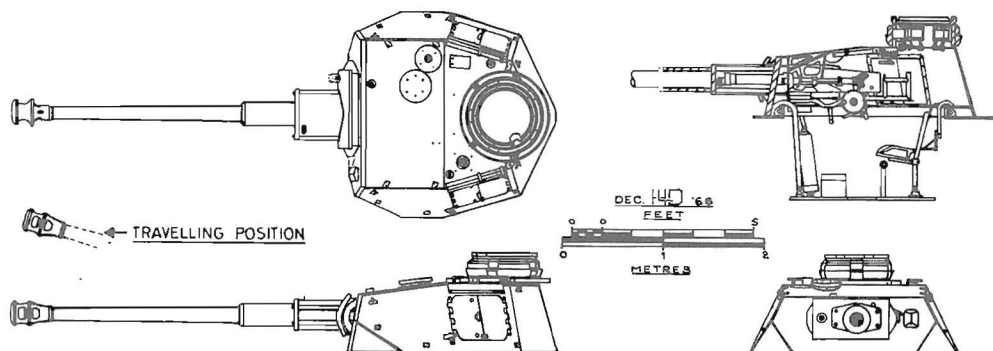
Manufacture Krupp A. G. - Magdeburg.



1 0 5 10 Scale of feet



A.C.V. H.P. L.P. (AEC) T 6 6 x 6 Mark 1
 Scale 1:76 (4mm to 1 foot) Drawn by A.J.D. North.



Turret of PzKw IV Ausf. J. (10/BW) late production type. 1944/45.

Scale 1:76 (4mm to 1 foot) Drawn by H. L. Doyle.

(Appendix to Bellona Print. Series 6, No. 22 GE. Pz Kw IV Ausf. J.)

This drawing shows details and sectional view of the turrets fitted to some of the later Pz Kw IV Ausf. J. Schuertzen armour is not shown but it is, of course, a standard fitting. Production was generally simplified, and all the vision slots including those of the door escape hatches were omitted, thus increasing the strength.

The left signal port was replaced. Three threaded bosses, the purpose of which is unknown, similar to those on the "Jagdpanther", "Jagdtiger" and "Hetzer", now appeared. The fan cover was enlarged, and its thickness increased; beside it was a flat round plate, with a grease nipple in the centre. On the right there was what appeared to be an armoured periscope cover.

The Ausf H appears to have only been fitted with the turret as shown in Series 6. However, some had an angle iron welded in a "V" in front on the cupola similar to that as shown protecting the circular hatch of the Stu Pz IV "Brummbaer" (Series 4, No. 14 G.) All 7.5 cm KwK 40, both L/43 and 48 were locked in position while the tank was travelling, this position is shown on the drawing. In addition it must be remembered that all Ausf H and most Ausf J, had the tubular seven spoke idler wheel and normal silencer as shown on "Brummbaer" and the Ausf D drawings. The mesh type, so-called "Thoma", shields were only fitted on a small number of tanks.

BELLONA PRINTS

SERIES 11 No. 42 UK

Armoured Command Vehicle HP and LP (AEC) 6 x 6 Mark 1 - 1944/45

A.C.V.'s. provided Officers commanding armoured formations with a mobile headquarters in the field, they generally contained wireless equipment to maintain contact with armoured formations, map tables, and all necessary office equipment. The first A.C.V. was an armoured office body on a Morris 15 cwt truck chassis. Later, a few Morris Armoured Cars (ACI's) were converted, but the accommodation was rather cramped.

A larger vehicle built on the Guy Lizard 4 x 4 chassis was gradually bought into service in 1940. These were in turn replaced by a new design based on the chassis AEC (Motador 4 x 4 artillery tractor)

Meanwhile in 1940, the Royal Air Force requested a vehicle suitable for carrying two 5,000 gallon fuel tanks, AEC produced a special 6-wheeled drive version of the "Motador". This chassis was in turn used as a basis for the new ACV design. AEC, project model 0856, the ACV, T 6 x 6 Mark 1 (AEC). A similar type of chassis was also equipped with a 6-ton Coles Crane, and used by the R.A.F. for recovery and other aircraft lifting duties.

The ACV 6 x 6 Mark 1 (AEC) which is the subject drawn, was produced towards the end of 1944, it was more spacious and was reduced in height.

The chassis of the ACV is the 6-wheeled drive type, four wheel drive (Mid and rear axles) being used for normal road work and six wheel drive for severe cross country conditions. The engine is an AEC 6-cylinder compression ignition, and transmits power via a single plate clutch through a 4-speed main gear box, and an ancillary gear box to the mid and rear axles for ordinary road works or to three axles for cross country conditions.

Tyres of the "Runflat" type which enabled the vehicle to proceed for a limited mileage should they have been deflated by bullet or shell splinters.

The body is divided into four compartments, that in front houses the engine, the next is for the Driver, then the staff room and then at the rear the wireless compartment.

At the rear of the vehicle, there is an auxiliary generating set (4 KVA 100 cycles) for supplying alternating current to the wireless set, and to ventilating plant, which circulates the air in the staff and wireless compartments, as well as providing the means for cooling the number X 53 wireless set.

Provision is made for type X Mark II Cypher machine, and 3 wireless sets, one No. 19, One number X 53, and one Number R 107. The number 19 set is also the one used for intercommunications.

Technical Specification for ACV HP and LP (AEC) T 6 x 6 Mark 1

Crew: 8 including driver

Weight: (Laden and with crew) 17 - 19 tons

Dimensions

Length overall: 26' 1" (795 cm)
Width overall: 7' 11" (251 cm)
Height: (Laden) 8' 10" (292 cm)
Wheel base: 13' 8½" (420 cm)

Mechanical Details

Engine: AEC A 198, Compression ignition, 6 cylinder developing 150 BHP at 1,900 RPM
Gear box: AEC 4 forward, 1 reverse and auxiliary transfer gearbox with 2 speeds. Total: 8 forward and 2 reverse

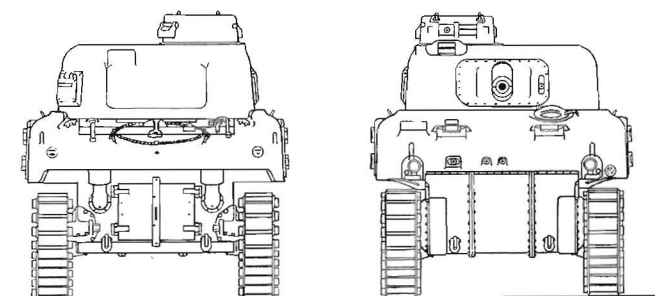
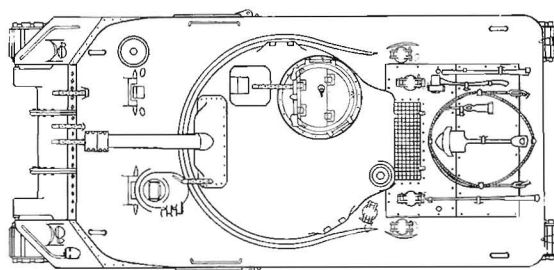
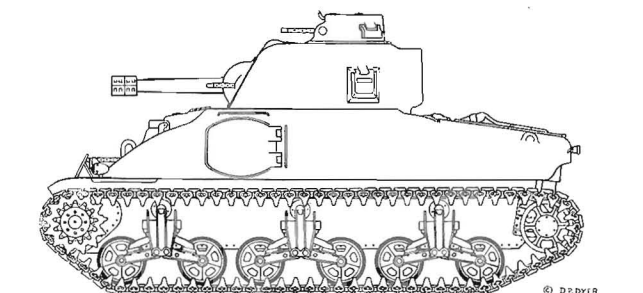
Tyres: "Runflat" 13.5" x 20" or 14" x 20"

Fuel capacity (internal) 50 gallons (247 litres)

Performance

Speed:	1st Gear High	7mph (11.25 Km/h)	Low	2.5(4)
2nd	11 (17.8)			4 (6.5)
3rd	19 (31.75)			7 (11.25)
4th	30 (48.5)			10 (16.1)
Reverse	6 (9.7)			2 (3.25)

Speed, Max road: 30 mph (48.5 Km/h)
Cross Country: 10 mph (16.1 km/h)
Turning Circle: 70" 0" (20.13 metres)



MEDIUM TANK T.6



Medium Tank T.6. 1941
 Scale 1:76 (4mm to 1 foot) Drawn by D.P. Dyer.

Medium Tank T.6 (1941)

The obvious disadvantages of a sponson mounted main armament were realised by the Americans even before the Medium M3 Series of tanks went into production. The M3 was only agreed to in view of the urgency of the situation in mid 1940, and taking into account the time that would be required to develop a large enough turret for a 75mm gun.

As soon as the development of the Medium M3 series was advanced sufficiently however, a further design was commenced to utilise as many M3 components as possible, but with the main armament in a 360 degrees traverse turret. This vehicle was given the experimental designation of Medium Tank T.6, and was completed by September 1941. As planned most components were common to both tanks, including the rivetted lower hull, 3 piece differential housing, suspension units with central return rollers, engine, engine compartment, and fuel tanks.

Due to the larger turret ring required, the upper hull was a completely new design. It consisted of a large one piece casting with smooth contours that kept shot traps down to the minimum.

The driver was moved from on top of the transmission to the left of it, and was provided with an access hatch fitted with a periscope for indirect vision. For direct vision he could adjust his seat so that his head protruded through this hatch, or he could raise the visor over a direct vision slot directly in front of him. A co-drivers position was introduced, but he was only provided with a direct vision slot and a sight rotor which was coupled to the flexible .30 cal. bow m.g. As a crew escape hatch was installed in the hull bottom plate near the assistant drivers position, it was presumably thought that there was no necessity for him to have his own hatch for rapid exit. Side hull doors were continued as in the M3 but did not have any pistol ports or vision.

The turret itself was also cast armour, was designed to have the Medium M3 Series type of commanders cupola, but there is no evidence that this was actually ever fitted. This was probably omitted to reduce the overall height, and partly because of its vulnerability and ineffectiveness of the machine guns in it. Two pistol ports with vision slots were fitted to the side of the turret.

The 75mm gun M2 L/31 and co-axial .30 cal. M.G. were mounted behind a fixed gun shield, and coupled to a sight rotor on the turret roof. Two counterweights were attached to the muzzle of the M2 gun when stabilisers were incorporated to simulate the M3 gun L/40 which was anticipated for production models.

After tests it was recommended that the hull side doors be eliminated to make the hull safer, that combination .30 or .50 cal anti-aircraft machine gun ring hatch be installed in place of the cupola, and that two 360 degrees periscopes be provided for use by the Commander and gun loader. Later evidence shows a gun ring hatch was fitted incorporating a periscope for the Commander, lifting lugs were welded to the gun shield and turret. A ventilator and a loaders periscope were fitted to the turret roof.

Approval of the T.6 design and production contracts were placed for the M4 series of Medium Tanks (General Sherman). The first example an M4 A1 was completed in February 1942, only six months after the M3 series had gone into production.

Technical Specification for Medium Tank T.6.

Crew: 5
Weight: 67,000 lbs, 30 tons, 33.6 short tons, 29.5 tonnes.

Performance

Speed: Max Road 25 mph (40 km ph)
Fording Depth: 36" (91.4 cm)
Trench Crossing: 6' (183 cm)
Range: 125 miles (201 km)
Gradient: 30 degrees.
Obstacle Height: 2' (61 cm)

Dimensions

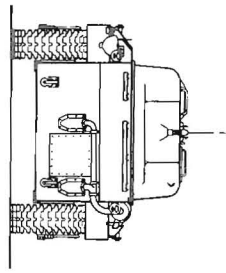
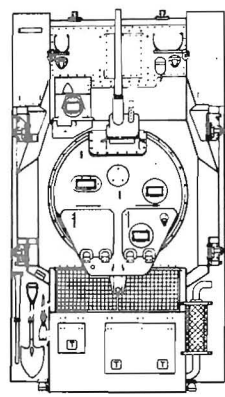
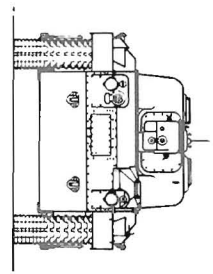
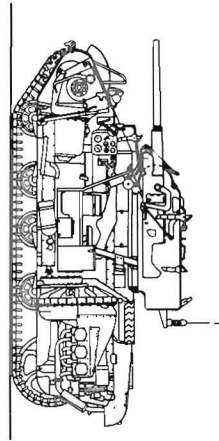
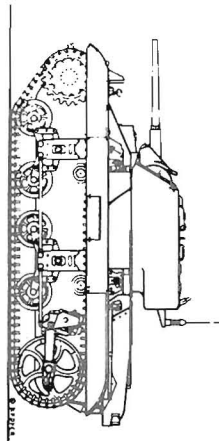
Length Overall: 18' 6" (564 cm)
Width Overall: 8' 8" (264 cm)
Height: 9' 7½" (293 cm)
Ground Clearance: 1' 5" (43 cm)
Track Width: 1' 4½" (42 cm)
Turret Ring Dia. 5' 9" (175 cm)
Fuel Capacity: 156 gals (175 gals U.S.) (708 Litres)
Engine: 1 x Wright Whirlwind radial R-975-EC2 Petrol.
Air cooled 360 bhp at 2,400 rpm.
Gearbox: Synchromesh 5 forward, 1 reverse.
Steering: Controlled Differential.
Suspension: Vertical Volute Spring.

Armament

1 x 75 mm gun M2 L/31 stabilised in elevation with
1 x 30 cal MG mounted co-axially in power operated 360 degrees.
traverse turret.
Elevation: plus 25 degrees. minus 12 degrees.
2 x .30 cal twin "fixed" bow m.gs elevation 8 degrees. depression 6 degrees
1 x .30 cal flexible bow m.g. 25 degrees traverse right and left,
elevation plus 60 degrees minus 12 degrees.
1 x .30 cal in cupola.

Armour

Cast Homogenous steel upper hull and turret. Rolled Homogenous steel
lower hull. Lower hull rivetted construction.



Light Tank M.22 (T9E1) 1943
 Scale 1:76 (4mm to 1 foot) Drawn by D.P. Dyer.

Light Tank M.22 (T9E1) "Locust" 1943.

Although J. Walter Christie had spent the previous decade designing and advocating development of light tanks that could be easily transported or dropped from aircraft, in order to provide airborne units with tank support. It was not until early in 1941 that the Americans decided to produce such a vehicle.

The design submitted by the Marmon-Herrington Co was considered the most satisfactory. Authorisation was given towards the end of 1941 for them to proceed with a pilot model which was given the experimental designation Light Tank T.9. Before this design had advanced very far various modifications to the specification were made and two further pilots designated T9E1 were ordered early in 1942. The first of these was completed in November 1942 and was sent to the Aberdeen Proving Ground for testing. On completion, the second T9E1 pilot was shipped to Britain for appraisal.

Whilst tests carried out on the T9E1 proved it to have many shortcomings as a fighting vehicle it was the only tank that could be made available for the role envisaged. Production was therefore put in hand and a total of 830 were produced between April 1943 and February 1944. During this time the experimental designation was still retained, and only after production ceased was it re-classified as Light Tank M.22 and adopted as a limited standard item of equipment. This classification is the lowest that can be given for a piece of equipment that does not have satisfactory military characteristics for standard issue, but could be used should it become necessary.

One of its main faults was due not so much to the tank itself, which owing to its role was of necessity lightly armed and armoured, but to the lack of suitable aircraft to transport it. Flight tests were carried out with the largest military transport available at that time which was the four engined C-54. As this was only a converted civilian aircraft (DC-4) this necessitated removal of the turret which was carried in the fuselage, the hull itself being suspended below by attachments to the four lifting brackets. This method of transport was not highly successful from the tactical angle, in view of the time required to prepare the tank for action on landing. At the end of the war, after the M.22 had been declared obsolete, it was transported very successfully in one piece inside the hull of the twin engined C-82 which was designed for this sort of purpose.

Large numbers of "Locusts" as the M.22 were named, were shipped to Britain for use by both American and British troops but only a very few were used in action. These few were landed in " Hamilcar " gliders to support the crossing of the Rhine into Germany by the 6th British Airborne Division on the 24th March 1945.

The design of the tank itself was very orthodox and followed accepted American practise regarding the suspension which was similar to that used on the M3/M5 series light tanks. On the first 26 tanks built the drivers head cover was cube shaped, and instead of a vision hole sealed by a plug there was a vision slot covered by an armoured visor. The head covers of both designs included periscopes on top for indirect vision. As the drivers head cover was also his access door he could drive with this open thereby exposing his head for uninterrupted vision. A portable windscreen was provided for use when driving in this fashion.

Technical Specification for Light Tank M.22 (T9E1) "Locust"

Crew: 3
Weight Laden: 16,400 lbs (7.3 tons, 8.2 short tons) (tonnes)
7.2 tonnes

Performance

Speed: Max Road 40 mph (64 Km.ph)
Cross Country 30 mph (48 Km.ph)
Max Gradient: 27 degrees
Fording: 3' 2" (96 cm)
Trench: 5' 5" (165 cm)
Step: 12 1/2" (31 cm)
Range: 135 miles (217 km)
Fuel Capacity: 50 gals imp. 55 gals U.S. 227 litres.
Turning Circle: 40' (12.2 metres)

Dimensions

Length: 12' 11" (394 cm)
Width: 7' 1" (216 cm)
Height: 6' 1" (185 cm)
Ground clearance: 10" (25 cm)
Track Width: 11 1/2" (29 cm)

Mechanical Details

Engine: Lycoming O-435T Six Cylinder, Horizontally opposed, petrol, air cooled. 162 bhp at 2,800 rpm.

Gearbox: Marmon-Herrington Synchronesh in 3rd and 4th.
Four forward, one reverse.

Steering: Controlled differential

Suspension: Vertical valve spring, 2 bogies of 2 wheels, and 2 return rollers each side. Trailing idler.

Armament

1 x 37mm gun M6 L/57 and 1 x .30 cal m.h. co-axial mounted in 260 degree hand traverse turret.

Ammunition Stowage

37mm rounds 50
.30 cal rounds 2,500

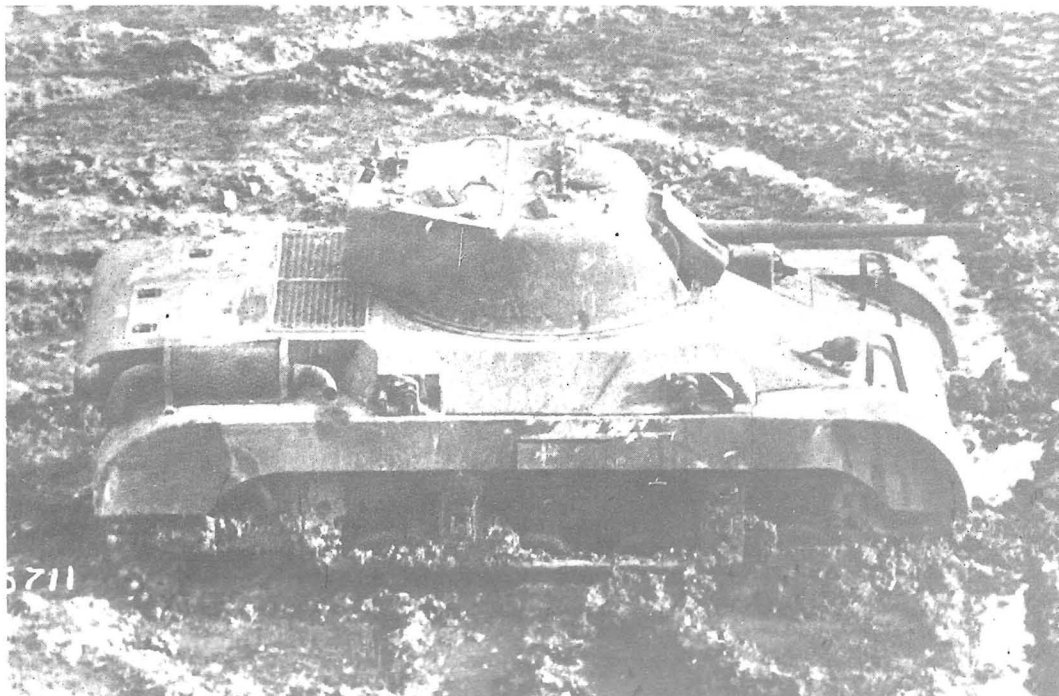
Armour

Hull: Rolled Plate, Turret: Cast.

Front Lower Plate and Turret Front and sides 1" (25mm)

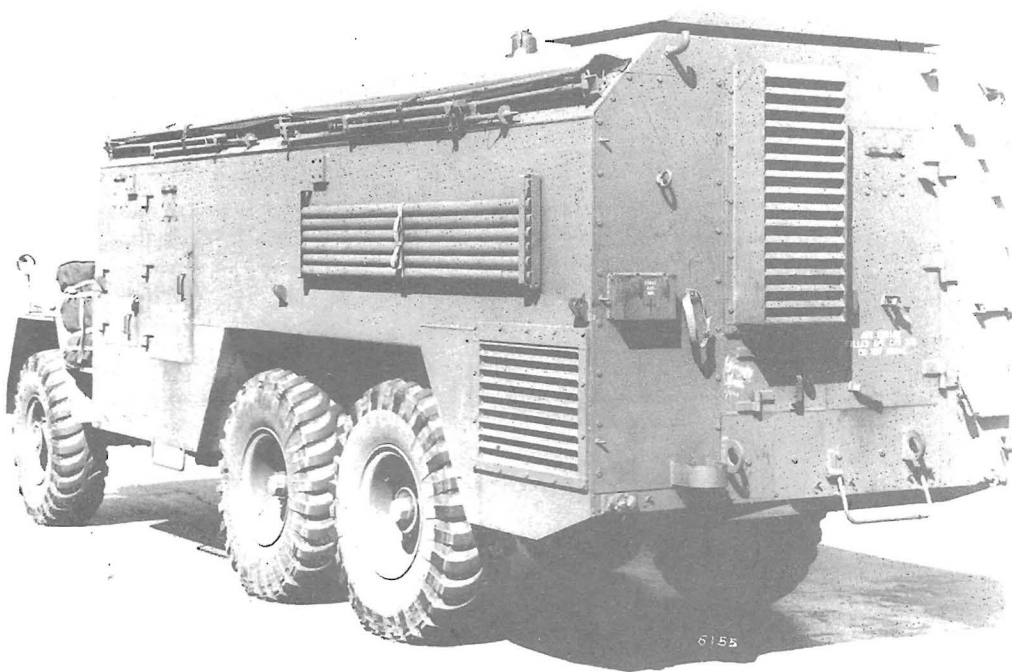
Front upper, Sides lower, rear, and belly 1/2" (13mm)

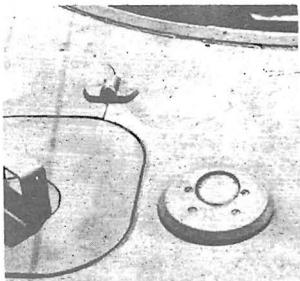
Sides upper, and top 3/8" (9mm)



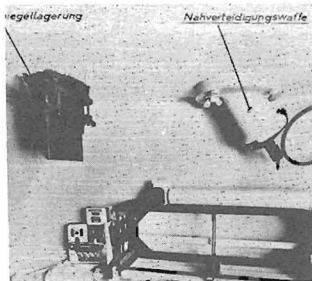
This photograph shows an M-22 "Locust" undergoing cross country trials in muddy conditions. Their is an M-22 (T9E1) On display at the R.A.C. Tank Museum, Bovington, England.

BELOW: This rear view of the A.C.V. T6X6 M Mark 1 (AEC) shows the important details of the back of this large and spacious A.C.V. (Photo by courtesy of A. E. C. Ltd)

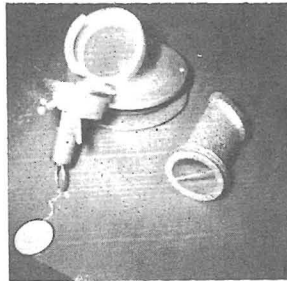




Top of Panzer IV/70 Sd Kfz 162/1.



Inside turret of PzKw "Panther"



Dismantled components of weapon

The 'NAHVERTEIDIGUNGSWAFFE' (Close-in Defence Weapon) 1943-45. by Armin L.Sohns.

Despite the fact that it was fitted to almost every late model German Tank and Assault Gun type vehicle, it remains almost unknown to the present day. Wartime test reports on captured vehicles identified it as a signal device or ventilator, and even a recent publication called it 'Commanders periscope'. Undoubtedly this weapon was inconspicuous. It was mounted almost flush in the fighting compartment, and when not in use the muzzle was sealed with a cast plug fitted in the barrel (picture). The weapon itself was of 92mm calibre, consisting of a barrel about 7½" (19cm) long with a breech block hinged to it. A cylindrical extension of the breech-block housed the firing mechanism, a spring loaded striker bolt with a cocking ring attached. A section was cut away from the side of the extension to allow insertion of a "grenade blank" cartridge which acted as the propellant charge.

The device was at an angle of about 60 degrees to the top plate. Mounted in a circular ring it could be traversed through 360 degrees and be locked in any direction by winged nut. To fire the weapon, the breech locking lever was turned through 90 degrees, the breech then opened and the cast plug was removed. The projectile was then inserted and the breech closed. The firing mechanism was cocked by pulling back the cocking ring until the trigger dropped behind a projection on the striker bolt. The cartridge was then inserted and the weapon was ready to be fired by lifting the trigger from underneath.

It was introduced at the end of 1943, and served a dual purpose in defending the vehicle. As it was able to fire smoke generators (Nebelkerzen) it replaced all externally mounted smoke grenade projectors which had the disadvantage of having to be reloaded from outside after each firing. More important still, was the fact that it fired high explosive charges against tank hunter teams which came near the vehicle. This was a great advantage, especially for the turretless vehicles. Before its introduction, the crews of turretless vehicles were forced to defend themselves by opening hatches, and throwing out hand grenades or by firing small arms from these open hatches. Most vehicles built after mid 1944, had openings cut in the roof plates for the fitting of this weapon. It appears that it was in short supply, as many had this opening plated over, but "Nahverteidigungswaffe" was fitted in the following vehicles.

Panzerkampfwagen "Panther" late Ausf A and Ausf G. Sd Kfz 171.

Panzerkampfwagen "Tiger" late Ausf E. Sd Kfz 181.

Panzerkampfwagen "Tiger II" Ausf B. Both Porsche and Henschel turrets. Sd Kfz 182.

Stu G. III and Stu H. 42 Final Ausf G. Sd Kfz 142/1. and 141/2.

Stu G IV Final model. Sd Kfz 163.

Stu Pz. VI "Sturmtiger" (38 cm RW 61)

Jagdpanzer IV Ausf F. and Panzer IV/70 Sd Kfz 162 and 162/1.

Jagdpanther Sd Kfz 173 and "Jagdtiger" Sd Kfz 186.